Still Alive With Sir Clive!

ZXir QLive Alive!

The Timex/Sinclair NorthAmerican User Groups Newsletter

Volume 5 Number 1 Spring '95

Chairman Donald S. Lambert Auburn, Indiana

NEW IMPROVED!

MEMORY MAP

ROUTINES

OFFER ENDS $12.00! March 31st

FILES

Our Anniversary 5th Year!

SUBROUTINES

Strike up the

T/SNUG Information

T/SNUG

Here is the list of T/SNUG Chairmen and how to contact them. We wish to support the following SIGs:- ZX-80/81 TS-1000 SPECTRUM, TS-2068, TC-2068 Z88 and QL. If you have any questions about any of these fine machines, contact the:

Chairman

Chief Motivator
Donald S Lambert (ISTUG)

Vice-Chairmen

Tape & JLO PD Library
D G Smith
R 415 Stone St.
Johnstown, PA 15906
814 535-6998

Z88 Library
Dave Bennett (HATSUG)
329 Walton St. Rear
Lemoyne, PA 17045
717 774-7531

ZX-81 PD Tape Library
Ed Snow
2136 Churchill Downs Cir
Orlando, FL 32825
407 380-5124

RMG Enterprises
Rod Gowen (CCATS)
14784 S. Quail Grove Cir.
Oregon City, OR 97045
503 655-7484 FAX 503 655-4116

TS-2068
Rod Humphreys (V3UG)
10984 Collins Pl.
Delta, BC V4C 7E6 Canada
604 583-2819

QL PD Library
John Donaldson (CATUG)
835 Foxwood Cir
Geneva, IL 60134-1631
708 232-6147

BBS — GATOR
Bob Swoger (CATUG)
613 Parkside Cir
Streawood, IL 60107-1647
708 837-7957 Work 708 576-8068

Editor/Treasurer

LarKen PD Library
Abed Kahale (CATUG)
335 W. Newport Rd
Hoffman Estates IL 60195-3106

ZXir QLive Alive!

Is the newsletter of T/SNUG, the Timex/Sinclair North American User Groups, providing news and software support to the T/S community in a volume of four newsletters per year; beginning with the Spring (March) issue.

T/SNUG's main goal is to keep our Magazine, our vendors and our repair service alive for the benefit of T/S users.

These valuable services shall have free advertising space in this user supported Newsletter that they can see that we are still active out here. We must support their services whenever possible

Another T/SNUG goal is to unearth titles of all known Public Domain and commercial software available for all Timex/Sinclair machines building a library and providing lists of that software showing both the source and the availability

If you feel T/SNUG should perform other tasks, let us know your feelings. If you have solved a problem in one of your software or hardware, please share it with the rest of us.

TreaSury NoteS

As of March 1, 1995, we have a balance of $507.35

You can keep T/SNUG alive by an annual contribution of $12 for one volume made payable to Abed Kahale. Send check to -

ABED KAHALE
335 W NEWPORT RD
HOFFMAN ESTATES IL 60195-3106
Phone - 708 885-4337

Back Newsletter copies are available for $0.50 each postpaid

Article Contributions

Send in your articles by tape or disk and your inputs to -

DON LAMBERT
ZXir QLive ALive! Newsletter
1301 KIBLINGER PL
AUBURN IN 46706-3010

Phone 219 925-1372

Or by hardcopy to— Abed Kahale

GATOR's TWISTED PAIR

We have a 24 hour **BBS** and encourage you to exchange mail and contribute to the Upload Section. Use it and have fun!! (8N1 300-2400 BAUD)

Call 708 632-5558

and Register using your first name, last name and phone number along with a password you won't forget, and ***Write It Down!*** Do not try to do anything else this first time because all the board options will be locked-out.

When you call-in the next time, you will have Level 5 security and be able to enjoy full user privileges. The BBS has smaller sections called conferences. Select "J" for "Join a Conference" to see the different user groups. Select "TIMEX" to get into the Sinclair Section. The mail you then read will only be from other TIMEX Sinclair users but all SIGs share the same bulletins. Use extension .ART for articles, .ADS for ads and .NWS for news when uploading.

For help, contact the SYSOP by leaving a message, mail, e-mail or phone Bob Swoger — SYSOP

---=GATOR=---

Input/Output

by Abed Kahale

Keeping ZXir QLive Alive !

From

GEORGE CHAMBERS
TORONTO

$150 Can. through Robert Warner

The master Sinc-Link newsletters, the Tape Library and 35 lbs. of UK magazines were also received.

Thank you George

"*Glad to see Hugh Howie is making contribution.*", he wrote

ZX81TAPE

Dear XTender Users,

First of all, I would like to inform you that the development of XTender (the ZX81 emulator for MS/DOS) has been somewhat slackened in the past one-and-a-half year due to personal circumstances. If you're a registered user, please consider this letter as the proof that your registration is still administrated and that you will receive (information about) any new releases of XTender in the future. Please inform *me when your address has changed!*

Secondly, I am pleased to tell you that the long-awaited ZX81TAPE utility is now available. ZX81TAPE allows you to convert your own ZX81 programs from cassette tape to MS/DOS files. ZX81TAPE generates P-type files that can be LOADed directly into XTender (and also into most ZX81 emulators for other computer systems, e.g. QL and Aten). All you need is a simple DIY interface to connect a tape-recorder to the COM-port of your PC and some specially developed software. ZX81TAPE converts whole tapes at once - without any user intervention. The ZX81TAPE disk contains this software as well as text files that explain how to build the DIY interface and how-to use the software.

At this moment, the precise status of the ZX81TAPE utility is still indefinite. It may become part of the shareware version of XTender, perhaps it will be available to registered users only, or it may even become a separate package that can be ordered both by registered and non-registered users.

Anyway, if you wish to obtain a copy of the ZX81TAPE disk, you can order it *right now!* To order, please send a note with your name and address, mention the text 'ZX81TAPE' and include one of the following payments: (a) a EuroCheque worth NLG 15, or (b) NLG 15 in cash, (c) DM 15 in cash, (d) UK £7 in cash, (e) US $10 in cash or (f) 11 IRCs. (Unfortunately payments other than the ones mentioned here cannot be accepted and will be returned.) Upon receipt of payment, the ZX81TAPE disk will be dispatched to you.

I am looking forward to hearing from you soon!

Kind regards,

CARLOS DELHEZ
EMMASTRAAT 3
4651 BV STEENBERGEN
NETHERLANDS

ZX81-NewsBits

EMULATOR II Disk Released to Public

The files on this disk have been updated twice, but I am sorry to say that the disk hasn't been released till now. Since the idea came to me to get the Sinclair Emulators together, I've thought of also getting others, but wasn't sure of the response I get. This disk is a result of some concerted efforts to get the Sinclair Emulators and some programs placed in one set, so that they can be distibuted on a wider basis, other than through Internet. If anyone is interested in getting the disk, they can contact vendors who can get this TIMEX Master Disk emulator set, or they can get in touch with me. (Please mention Emulator II Disk.)

FILES.DIR	630	1/31/95	3:08:14PM
PKUNZIP.EXE	29378	2/1/93	2:04:16AM
POKE-SNA.ZIP	4462	12/4/94	1:30:40PM
README.TXT	3669	1/6/95	10:17:18AM
TSLIB102.ZIP	126880	10/31/94	3:31:56PM
TW2.ZIP	10114	12/4/94	1:28:22PM
WHATISIT.TXT	3902	10/31/94	3:27:36PM
XTHOR014.ZIP	106569	11/29/94	1:29:52AM
XTMDR114.ZIP	132371	11/29/94	1:42:34AM
Z80-303.ZIP	225705	2/1/95	7:06:04PM
Z80STUFF.LST	1698	9/22/94	6:34:24PM
Z80STUFF.ZIP	34826	10/31/94	3:07:30PM

An explanation of these files is included in the README.TXT. Please mention "Emulator Disk II" as the title in the e-mail.

E-mail — rlg@world.std.com

USPS mail — ROBERT L GILBERT
12A NATHAN RD
WALTHAM MA 02154

New Sinclairists

Today I received your response to my inquiry in an ad in UPDATE!, thanks for writing. I wrote Mr. Chrestien answering his ad for a TS2040 power supply and a couple other items. Thank you for answering my questions.

I'm anxious to learn more about this little computer (the TS 1000). I like to wander around garage sales and thrift shops and picked up a couple of TS 1000's real cheap. I found the little machine intriguing and like to play with it when I find time. I've had them a little more than a year now. Doug Wagoner

Thanks for all the information you sent. Up until now I've just had the TS-1000. However, I've recently ordered a 2068 setup as advertised in July UPDATE! from Frank Davis of Mechanical Affinity. In the future I'd probably be looking at performing some updates to the 2068 from information I've picked up reading various Sinclair publications. I recently purchased a large box of them from John McMichael of Laramie, Wyoming. I'd like to be able to use Spectrum software (Spectrum ROM chip), use my RGB composite Magnavox CM 8764 monitor (internal modifications and appropriate connector) and get a printer interface and appropriate printer driver software. My printer is a 24-pin Panasonic KX-P2123 with color option. I'm not anticipating an upgrade to disk drives at this time because of the cost and troubleshooting that would probably be involved. How best to attain my present upgrade goals? I'm quite mechanically inclined but probably have limited abilities when it comes to electronics. I have an article and diagrams for the update of the monitor but it seems to be aimed at someone with some experience.

Also, I'd like to place an ad in the next newsletter to obtain some magazines and software.

Thanks again for the help Abed! Perhaps someday I'll be writing you a letter on a Timex/Sinclair computer instead of my Commodore 128!

Doug Wagoner
Post Falls, ID

Spectrum: *A ZEBRA Dock Port board is available from Mechanical Affinity. Call and ask for a price. If they don't carry the Spectrum ROM for that board contact first RMG. Otherwise contact me as the LarKen V2 Spectrum ROM is available for sure. It is always better to stay out of the computer yourself and use only the above mentioned board. An internal solution may be available by contacting Dan Elliott of Computer Classics.*

Printer Interface. *Contact RMG for an AERCO CPI for your large printer as he just acquired AERCO's complete stock. My KX-P2023 works directly from TASWORD and MSCRIPT word processors through AERCO. You select fonts from the front panel - EPSON emulation.*

Monitor: *Connect a shielded cable from the COMPOSITE input to the VIDEO output of the TS-2068. Otherwise you will need an RGB board for a finer picture.*

You should really think about getting a disk drive interface before you can't any more. The John Oliger Disk Operating System may be your best bet as LarKen DOS seem to be sold out.
(Addresses are in the Ads section) *Editor*

4 Members Join

The Chicago Area, CATUG, In 1994

Welcome to the Sinclair world

Jeff DeCourtney	ZX-81 TS-2068 Tape
Philip Kwitkowski	TS-2068 LarKen
Bobby Muth	TS-2068 Tape
George Zimmerman	QL

Butch Weinberg, a former member of CATUG donated his collection of ZX-81, TS-2068 and QLs.

Joan Kealy gave away her misbehaving LarKen RAMDISK to Bob Swoger. Bob with the help of Phillip Kwitkowski, CATUG brilliant young member, were able to bring it back to life after two days of surgery. Guess who got to keep it? They also built a couple of TASMAN printer I/Fs on the side.

Welcome to our New Members

Doug Wagoner **William Krossner**
J A Bowers **Howard Chegwidden**
Larry Crawford **J B Pegram**

Z88 Anyone?

Joan Kealy got herself a Z88. Was it caused by Hugh Howie's article in the last issue of ZQAI?
I wonder? *Editor*

Recently received vol. 4, number 3 of *ZXir QLive Alive!*, It was the first issue that I have seen even though I was quoted on page 5 thanking you for your efforts with regards to SNUG.

It is great news to know that T/SNUG is alive and kicking. The Unclassified Ads section is a fabulous feature in this fast changing world we have chosen to stay in.

Is there any possibility of getting the copies that I missed out on?

Enclosed is a pair of disks with my version of TASWORD that you may find of interest.

Best wishes for success in 1995 and beyond.

Larry Crawford
London, ON Canada

Nice of you to join us and welcome aboard. We have benefited from the good articles that you have written over the years. Your article contribution is always welcomed. I will review your TASWORD version in the next issue. And thank you for the kind words. *Editor*

HELP!

WANTED NEEDED

User's Manual

QL Psion PC4 package for IBM clones.

I have a client who would seriously like to buy the manual or borrow your manual to run copies, return to you and pay for all postage incurred. Any help would be greatly appreciated. He had a fire and lost his copy of the manual.

Rod Gowen
RMG Enterprises
14784 S QUAIL GROVE CIR
OREGON CITY OR 97045
503 655-7484 (10AM-7PM Tue. - Sat. Pacific)

SNUG News

I have completed the mailing of postcards to all known past SNUG members. Received replies from them indicating the publication of their choice to have the remaining subscription extended in either UPDATE!, IQLR, T/SUNG, donate to T/SNUG or a refund.

Their choices were:

10 UPDATE!
4 IQLR
23 T/SNUG
14 Donate to T/SNUG
21 Refund
7 Return to sender - address unknown

The detailed information were sent to Paul Holmgren including updated addresses for him to carry on.

The ball is in your court, Paul ! Editor

WANTED: Bob Berch or JRC Compiler

I was interested in your letter in the May issue of Electronics Now ... I still have three TS-1000's. I regard this machine as the finest teaching machine on microprocessors ever put on the market.

I would especially be interested in any *compiler* programs. I have used the Hunter board to extend memory in the 8-16K space, and have written some assembly programs for these boards I would be happy to share with the group

WILLIAM KROSSNER
PO BOX 3047
DULUTH MN 55803-3047

We always welcome any material on the Sinclair machines. Please, do join us. Editor

There will be a QL Show in Tennessee June '95

UPDATE!

New Address

UPDATE! Magazine
PO BOX 17
MEXICO IN 46958

More On Re-Inking Your Own Ribbons

by Rod Gowen

Have any of you tried re-inking your own printer ribbons? If so, you may have found that the ribbon ink tends to thicken up after a while due to the fact that it lasts so long. Some of the people I have spoken to or corresponded with tell me that they have been adding some sort of petroleum product (such as WD-40) to try to thin it out. I have also been told that they use the same product to "wet" the ribbon if it is dried out.

The use of petroleum products is very hard on both the ribbon (it can actually cause some types of ribbons to dissolve!) and to the print head. I have done a lot of research over the years on this subject and in all cases, when I have spoken to the *'experts'*, I have received the same answer - USE REGULAR MINERAL OIL! The kind you may have in your medicine chest. Use it to thin your ink and to 'freshen' your ribbons. Your ribbons will last longer and so will your printer's print head.

To clean up your hands and workspace after doing some re-inking is the next topic. I have been told that folks have used various types of cleaners and again, petroleum products (like WD-40), to do this. I have even purchased a product from an ink supply house specifically developed for the job (at $18 a pint!) and found that for the most part, the very best product I have used to date to clean my hands is the hand cleaner called GO-JO. It is available at any auto parts store as well as most department stores in various sized containers. I bought 2½ gallon containers with a dispenser for about $15 a few years ago and am still using it. A small tube of about 6-8 ounces will cost you about $2-4.

I hope that these bits of information will be of use to some of you. Remember, RMG Enterprises sells the black and colored ribbon inks in various sized bottles if interested, you will find an address and phone number elsewhere in this newsletter.

Amen, I have been using mineral oil for thinning out the ink as it thickens with age and becomes like molasses. Also, see ZQA! Vol. 2 No. 3, Fall 1992.

Errata

Any idea why I received two copies of your Winter 94 newsletter? True - I do have two eyes - but usually I find it practical to use both of them on the same piece of reading material!

Unless you prefer otherwise, I'll give the spare copy to a friend, who has a few TS-2068 computers. You can never tell!

In any case - someone should check the files to be certain that my name is not listed twice.

The big clock on the wall says that bedtime approaches... so I will cease and desist as of now. Keep up the (otherwise) good work!

Fred Henn
Amherst, NY

I won't do it again, honest. I believe what has happened was that the printer ran out of labels and I had to feed it again.

Do give the spare to your friend, may be he will join us. *Editor*

Other than the mention on the first page of the Winter '94 edition of ZQA!, the fact that members need to renew at this time, was not trumpeted in the newsletter. It almost slipped by me, I hope other members are more observant!

I appreciate your time and trouble.

Gilliam Parrish
Beggs, OK

I do appreciate your concern. *Editor*

HELP!

Please put the following plea into the next ZXir QLive.

I have one Z88 that has developed a peculiar problem. I can shut down normally with the two shift keys, but it will not come back up, unless I do a reset (sometimes) or take the batteries out, put them back after a few minutes and maybe have to do a reset also. Needless to say, this is frustrating since everything not SAVEd to EPROM is lost, and the machine must be reconfigured each time. Any ideas? Anybody have some schematics? TIA for any helpful hints.

Greg Bridgewater debbie voice (412)363-9713
INTERNET: gregbh2o@telerama.lm.com

GREG BRIDGEWATER
5500 HAYS ST
PITTSBURGH PA15206

$$4{,}195{,}835 - \{(4{,}195{,}835 / 3{,}145{,}727) \times 3{,}145{,}727\} =$$

Pentium processors = 256
Sinclair processors = 0

FROM THE CHAIRMAN'S DISK

Donald Lambert

Saw this in an electronic magazine on page 13 of Electronics Now, February 1995 "but can a non-professional really wade through multi-megabytes of code? That is why a number of hobbyists are rediscovering the eight-bit systems and early IBM personal computers. They are understandable, inexpensive and fun." All the big memory computers have one fault and that is one size fits all. If you want to personalize a program for yourself it is virtually impossible to do it yourself and the pros want big bucks to do it for you because they do it to please themselves not you.

For those of you that have the 747 Flight Simulator there was an article in READER'S DIGEST, January, 1995, that gave some flight specifics take off speed 180 mph. Cruises at 37,000 feet at 600 mph. The first production model prototype for testing rolled out September 30, 1968. It is 232 feet long. Cockpit is 30 feet from the ground. 22 crew members and 57,000 gallons of fuel. The 747 is a growth from the 707. I have ridden in both. The 707 had more room for each individual passenger but then it had less cruising range. It is no feat for a 747 to fly nonstop from Detroit to Narita Japan in about 13 hours.

In the March 1995 issue of Popular Electronics is an article by Jeff Holtzman (pages 68-69) on object-oriented operating systems. That gets into hierarchical trees which is a way to represent relationships among families. Wait a minute Lambert you done sprung that long "h" word what gives? O.K. in DOS that would be C:\ C:\FINANCE C:\FINANCE\1992 C:\FINANCE\1992\JAN. But wait a minute this is T/S not MSDOS! How true, yet with the Portuguese ZEBRA TOS that uses object system, it is quite in line. TOS allows you to have up to 15 DIRectories on a disk plus the disk name. So what does that mean? Well, for an example suppose you have a disk with games on it. You could label the disk GAMES and that is fine and dandy. But suppose you want to play a board game and it has been some time since you played games, is TARZEK a board game, an action game or a word game? So you create a DIRectory BOARD and WORD and ACTION and when you SAVEd the games originally you put them into the proper category. Then when you want a board game you would CAT*:GAME.BOARD and it would display only the files under BOARD. There was more promised for the next issue of Popular Electronics, but I couldn't find the article.

Start planning for the next Dayton ComputerFest that will be held August 26-27. Flea Market space will be available after May 31. The '94 ComputerFest drew over 44,000 attendees. See you there!

Just fixed one of my two TS-2040 printers. I thought that I would have to replace the jack. What had happened was that the Jack had tilted away from the circuit board on the connector wires that are in the rear of the jack. So I mixed up some epoxy and clamped it in place till the epoxy dried. Working now. I also have an Alphacom printer for a spare. I use a TS-2040 printer on each of my two working TS-2068 computers.

I have been doing some soul searching and have concluded that I have no intention of ever working with the TS-1000 computer again. I have lots of stuff related to the TS-1000 that I would like to find a happy home for. At the present moment I have not inventoried the extent of my stored TS-1000 related items so if there is any one particular item you are looking for let me know. An offering price that includes shipping. You will see my ads from time to times. I have a CAI stringy floppy interface with extra wafers (the little tape cassettes if anyone is interested send me a letter with an offer). Expected shipping is about 6 lbs.

I solved the on again off again static electricity problem. My computer chair has a leather seat and I wear two different pants at home, one is a pair of blue jeans and the other is some artificial fabrics. The blue jeans are not prone to static build up but the other one are so. I must remember to lay my hand on the ground strip (grounded through a 1 megohm resistor) before I even put my hands close to the computer. Slide on the seat of the chair in the artificial fabric pants and it is snap and crackle time. 0/0

NOTICE

Since UPDATE! Magazine and ZXir QLive Alive! are mailed quarterly on the same month, we have decided to mail ZXir QLive Alive! a month earlier. Our new mailing dates will be -

March (Spring) — June (Summer)
September (Fall) — December (Winter)

Any material for publication should be received by Donald Lambert or Abed Kahale by the 10th of the preceeding month.

Thank you

ZEBRA FDD

by Donald Lambert

Some details of the disk interface:

The actual dimensions of a 3" disk are thickness 3/16, width 3 1/8, length 3 29/32 and they come in a hard plastic case which is larger. The 3" disks are called CF2, whatever that means. To compare the actual size of a 3.5 disk is 1/8 thickness, 3 9/32 wide and 3 9/16 long.

The actual interface unit is in several cases. First is the *twister* board to adapt the Spectrum/TC-2068 unit to the TS-2068 computer. It is 7.5" wide with the TS-2068 feedthru coming off to the right and the TC-2068 feedthru going straight out from the TS-2868 computer. The twister board is about 4.5 inches deep. Plugged into the twister board is a box, the interface box, measuring 3.75" deep by 3.625" wide and 1.187" high. It plugs into the twister board. On the back is a 15 pin D male socket. From the male socket is a couled cord that goes to the controller. The controller, the disk drive and the power supply are all identically sized and can be stacked. All boxes are silver in color. Their dimensions are 2.750 highs 6.25 deep and 4.750 wide. The power supply has three disk drives type connectors to supply power to a maximum of 2 disk drives and the controller. If more disk drives are added then it would be necessary to have another power supply for the added on disk drives. The controller has two 9 pin D sockets for the serial interfaces.

One outstanding thing is that there are no exposed boards or wires and everything is self contained. With the T/S twister expansion connector it is possible to continue to use the regular accessories that you are used to using.

Comparing the four disk interfaces, the LarKen, the Oliger, the AERCO and the ZEBRA or TOS in operation, the ZEBRA is more like the AERCO in that the disk has to BOOT automatically to get the disk system going. To use the TOS, you put a disk in the drive but not seated and turn on the power supply for the interface but not the computer. After turning on, push the disk to seat and the disk drive light will flicker and when it stops, turn on the computer, the disk drive light comes on again and if you watch closely you will see the screen flash with the normal logo plus a line that says TOS 1985. You get the AUTOSTART program if there is one or else the disk directory. The LOAD/SAVE and other commands are like the Oliger in that you use an * instead of / to use the disk system.

I have successfully gotten a 3.5 drive to work with the interface in the one sided 40 track mode. Later I discovered that I could FORMAT to 80 tracks double sided but I did not get the four disks SAVEd to double sided 80 tracks. I did get them to save to 40 tracks single sided on the 3.5 disks. For a reason that I don't understand the program "BACKUP" will only copy from a single sided 40 track disk to the same type disk. While I was working with the system it died and apparently the edge card connector that plugs onto the twister board split and the fingers no longer made contact with the twister board. I shipped the entire outfit to Nezir Peshtoon for repair.

Later received a letter from Jack Dohany. I ordered a pair of drives (3.5 new and tested) plus a 64K controller for the ZEBRA system so that I could use CP/M. After I get the system going I will get some CP/M disks for the ZEBRA system. I have found the 3" drives to be dependable and while I have no proof, I believe that they are 30ms in head step rate. At least they seem slow. I received 5 disks from George Chambers and while they had programs on them they were not TOS. I moved the drive to the other computer and tried the LarKen, and there was the directory. Of course they were single sided but a few were FORMATted to 42 tracks. I copied them to 5.25 disks and have plans to reFORMAT the disks to TOS when I get the system up and going again.

While I had the drive on the other computer I did check the rpm and found the drive to be a very uniform rpm 297 for all eight of the first eight revolutions on turn on.

In a letter I received from Jack Dohany he stated that in FORMATting from DFM that if you select 40 tracks it is always FORMATted to single sided and that if you FORMAT to 80 tracks it is always FORMATed to double sided. So that is solved. That is in the FDD EPROM.

The program BACKUP is only for copying 40 tracks single sided to 40 tracks single sided. I did not get a chance to test the copying routine on DFM since the interface died about then. When I get the interface back I will FORMAT disks to 80 track on the 3.5 drive and try out the copy routine.

I have read and reread the FDD manual and now await the arrival of the interface to try out things. 0/0

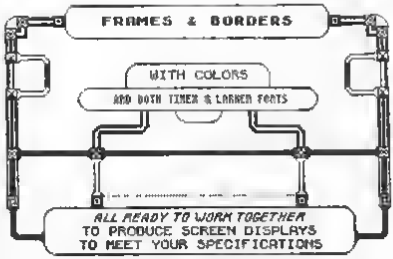
WINDOWS BY SHADE - PART 2

by Robert Shade

Each of the windows is preset by the implementation program to a different mode. The upper left section is set to All Characters, the upper right section to Capitals mode and the bottom section to Numbers mode. Press ENTER when data entry at an item is completed and the data entry cursor is erased and the highlight is placed over the next item. Each of the data entry operations produces a different tone. The tone for the 'C' to 'L' cursor is the highest frequency tone, the character tone is lower, and the ENTER to end data entry at that item is the lowest. This new data entry routine just as the older version has two sister routines that see to it that no less than 0 characters are left after a delete. The new data entry routine uses the standard 'CS' + '0' for character delete. This new data entry routine still does not provide an insert mode and looks out the arrow keys. I had considered and had tested an insert function for this new version but the fact that with the extended BASIC functions slowing down the whole data entry routine so much, I gave up on having an insert function with this version. Pressing Change function will change the business name LOOMIS-SHADE PHOTOGRAPHY to LINDA SHADE PHOTOGRAPHY and the AM to PM for the time of day entry and back again when each is highlighted. This demo has a complete date and time of day checking and error reporting routine. The Window to Window Shift function will cause the highlight at any item in any window to shift to the first item in the next window. The Next or Prior item function moves the highlight from item to item only within a window in an up or down direction with wraparound. Pressing the Finish function at any time allows the user to add any amount of data desired from a blank file to a fully entered file. The Finish function will first prompt 'Is All This Data Correct? 'Y' or 'N'. If NO is pressed the user can return to change or enter data into any item entry. If 'Y' is pressed that concludes data entry into that file unit and 'Another File Unit? 'Y' or 'N' prompt will appear. If 'Y' is pressed this will clear all the entries for the last file unit from the display and setups the next file unit for data entry. If N is pressed the data entry operation is ended and the program will display the main options menu. The Quit function provides an immediate escape from the data entry operation to the main options menu at any time. One of the most important improvements to this demo is the far more extensive core of subroutines, the MC components and use of HI-RAM memory to temporarily store data entered. All the characters in all these fonts center properly within the TIMEX attribute color (paper) block they are printed into.

There are five fonts used by these demos:

1 LarKen 64 character (for data entry),
2. LARKEN Italic (for printing our company name to the screen on simulated labels)
3 LARKEN 42 character (printing titles within the windows)

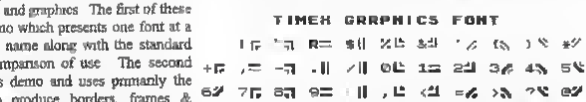


4 TIMEX 32 character bold (titles & menus)
5 TIMEX Graphics (borders, frames, constructs, simulated tractor-feed sheets & labels)

Even though the LarKen italic font has been improved it still suffers. This produces a line which is readable, but slightly wider than desirable. Because the primary use of this font is to print our individual and company names to the screen display as simulated labels and record pages, the font has been divided into two halves to provide two ways of printing those names. The first half of the LarKen italic font only provides numbers, function capital and some symbols to be printed as individual stand alone characters. The second part is lower case characters which have been designed to print somewhat more succinct versions of our individual and company names. This is done by designing the whole line of characters so close together that most of the 8 x 8 character blocks have more than one character per block. If for instance the LarKen italic font was selected you could print my company's name to the screen display by either PRINT #7, "LOOMIS-SHADE PHOTOGRAPHY" or PRINT #7, "mnnopqrstefghijkl" The second screen print would not be as wide, but both are OK. The LarKen 64 character font is LOADed into the LarKen cartridge. The LarKen 64 character font is the font used for the data entry routine. This font also provides three mode cursors. It provides an inverse 'C' & 'L' for the standard upper & lower case printing, and an inverse right facing arrow cursor for numbers only data entry. I selected the standard font characters to be converted for use as cursor because I felt they were the least used and least missed. These were the underline, character code 95, for the inverse 'C' cursor, the up arrow, character code 94 for the inverse 'L' cursor and the back-slash character code 92 for the inverse right-facing arrow cursor.

These three selectable modes simplify data entry. A numbers only mode entry does not need a separate routine to ascertain if letter, function or symbol characters have been entered into a data or time of day entry by mistake. This new data entry routine allows the extended mode characters to be entered in all characters

and caps By pressing SS & the Y U, P, F or G keys, the user can print the extended mode brackets and copyright symbol to the screen. Not all these 5 fonts are used in the three window screen displays, so I have included two other demos that use all the fonts and graphics The first of these extra demos is the font demo which presents one font at a time with its type and file name along with the standard TIMEX ROM font for comparison of use The second extra demo is the graphics demo and uses primarily the TIMEX Graphics font to produce borders, frames & constructs. Each main screen display is labeled and some of the dozens of screen displays are titles and colored In the graphics demo there are several displays which are used to preview data printouts these are the tractor-feed labels and pages Other graphics displays are for the production of cover screens. such as horizontal and vertical film strips The old "FILMRECORDER" demo did have fonts in HI-RAM but did not have any MC program blocks in HI-RAM These three window screen display demos do have some MC program blocks in HI-RAM These include Jack Dohany's LarKen Disk Utility, 255 bytes and Jack Dohany's The Break Utility, 80 bytes, my Primary Data Entry Routine, 1399 bytes, and my Data Storage Buffer Clearing Routine. 65 bytes. I have enclosed a copy of the memory map of memory usage above RAMTOP, a copy of the core subroutines catalog listing, a copy of the substitution chart for the extended mode characters, a flow chart and a list of the router variable used in the LarKen extended BASIC part of the data entry routine, copies of the fonts demo displays and a few variables usage listings for your convenience If the user/programmer needed more RAM space for an implementation program data string he could delete as many of the lines from the core



TIMEN ROM (BLUE) TIMEH (BLACK)
FONT FILE NAME - "CHGMO1.CS"

subroutine as needed and that would still provide all the GOSUB's to get the job done If the core subroutines line numbers were not changed the user/programmer could still use the same catalog of core subroutines listing as before The core subroutines could be reinstated with a DELETE/MERGE from the end of the implementation segment before the next implementation segment was itself MERGED into the program Drive these demos around, kick their tires and let me know what you think of them.

QL Hacker's Journal

Supporting All QL Programmers

Editor's Forumn

The only key item of news is that as I am writing this the latest version of C68 v 4.2 has partially come out. I received the zipped version of C68 Runtimes disk #1. Dave Walker should be sending the rest of the disk out soon. Since I have internet access I am on Dave's mailing list for updates of C68 Dave prefers to distribute the package as a number of large mail messages When I get them, I convert them back into a binary file and get them over to the QL I then send a copy of the disks to Don Waltemun of QBOX-USA and to Bob Dyl of the IQLR. If I remember, I can upload them to a number of QL FTP servers on the net. The key ones are maya.dea.unipd.it and ftp nvg unit.no

For those interested I have a new Sinclair Internet Resources List that has a number of Sinclair World Wide Web sites listed. The amazing thing is that there is a ZXSI home page out there If you would like a copy of the list, send me a note I tried posting it to comp.sys sinclair, but I don't know if I was successfull.

The last item of note is that I have finally broken down and bought some new hardware. I went out and picked up a new HP Deskjet 520 inkjet printer. It's output is almost laser quality, esp with the specially designed inkjet paper This is not something I normally do My last printer, a DWP-230 daisy wheel, cost a grand total of $1 at a garage sale. And it has worked for 2 years with out failure. It was only when I thought it died that I considered buying the Deskjet. (I forgot that these diable HI-TYPE II printers do run out of ribbon and will not print after that. And I thought it was dead.)

That's all I have for now Happy Hacking

Displaying QL Screens In MS-DOS

It's not normally the policy of the QHJ to publish programs that are written for other platforms than the QL But in this case, I can make an exception. The following program by Jeff Kuhlman is designed to display a QL screen file on an MS-DOS computer I've tried it with my MS-DOS laptop (CGA display) and with a 486 (VGA display) and it works fine on both computers

As more and more QLers are buying PC's, programs like this are becoming more usefull. ED

```
/* SHOWGR.C    A 'C' PROGRAM TO DISPLAY
'_GR' FILES
 FROM THE MDOS PROMPT */
/* JEFFREY A. KUKLMANN Z7FEB94 */
#include "graphics.h"
#include "stdio.h"
#include "string.h"
#include "stdlib.h"
#include "io.h"
#include "fcntl.h"
char infn[81];   /* input file name */
char str1[81];
char buf[128*200+128];
FILE inf;
int arry[20];    /* utility array */
char rows[81];   /* row string */
char cols[81];   /* columns string */
int ctr,end,delim,col,row;
int rctr,cctr,cptr;
int chardat[8],chrptr;
char hexdat[81];
int hex[4];
int blank[4],where,pval,ccc;
int mptr,fd,gm;
main(argc,argv)
int argc;
char **argv;
{
gm=5;                          /* Graphic Mode */
if (argc<2) /* If no file name given on
command line, */
{                              /* ask for one */
setvmode(2);
puts("QL SCREEN VIEWER FOR MDOS");
puts("Press any key when done");
puts("Viewing picture...");
puts("QL SCREEN file name? (w/o .SCR)");
gets(infn);
}
else strcpy(infn,argv[1]);
strcat(infn,".SCR");     /* add required
extension */
setvmode(gm);            /* change video
mode */
fd=open(infn,O_BINARY), /* open file for
reading */
mptr=0;
if (fd==-1{ {setvmode(2(; printf("Can't
open %s",infn);
    exit(0);}
read(fd,buf,128*200);
   /* ^ read first 200 lines into a buffer
*/
 for(rctr=0;rctr<200;rctr++)
   /* ^ 200 pixels in 'y' direction */
  for(cctr=0;cctr<128;cctr++)
   /* ^ each QL line is 128 bytes */
  { pval=buf[(rctr)*128+cctr];
    if(rctr%1{
     /* ^ need to take into account odd
scan line */
    poke(0xba00,(rctr-
1)*40+cctr/2+8,pval);
    else
    poke(0xb800,rctr*40+cctr/2+8,pval);
  }
while(!kbhit());     /* wait for keypress
*/
setvmode(2            /* restore 80 col
mode */
exit(0);
}
```

Recent Freeware Releases

A number of freeware programming packages have come my way. I have copies if anyone is interested. Most if these programs should be available on the Internet. If not, I will try to put them out there.

BISON - Port by Dave Woodman

BISON is another version of YACC (Yet Another Compiler Compiler). BISON is used to create a language parser.

FLEX - Port by Dave Woodman

FLEX is another version of LEX, a lexical analyzer creater.

INTERCAL - Port by Dave Woodman

INTERCAL is a programming language designed to have nothing is common with any other major language.

DIFF - Port by Dave Walker

DIFF is a program that will show the differences between two files.

RCS - Port by Dave Walker

RCS stands for Revision Control System. RCS is a number of tools that are used to keep track of various changes to text files. Mostly it's used on source code. It lets you back track a few versions if you need to. It can also be used in a programming shop where more than one person may be editing the same code at the same time. It lets one person check out the code and only they are allowed to update any changes.

Infocom Reader - By Luke Roberts

The program name is really ZIP. Most INFOCOM games are stored in a data file and a game file reader is used to play the game. ZIP is a QDOS port of such a reader. With this program, you can take almost any INFOCOM game and run it on the QL. Luke has tested it with a number of games already. For those that don't know what INFOCOM is, INFOCOM is a game company that put out a number of text-based adventure games back in the early to mid-80's. A number of their popular games are Zork (I - III), Deadline, Planetfall, HitchHikers Guide to the Galaxy, and Suspended.

In other news, I've heard from Dave Walker that a new version of C68 v 4.20 will be out sometime before Christmas. I don't have any details on any of the changes or upgrades. Since I am now of Dave's distribution list, I should receive the new version as soon as Dave releases it. For the U.S. readers, once I get it, I will send a copy to Don Walterman so he can put it up on QBOX-USA. He said that he and John should be putting a hard disk on QBOX-USA soon, so he will have lots of disk space C68 and other stuff.

QL Hacker's Journal
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QXL Notes

by Al Terry

MIRACLE SYSTEMS' QXL is the reality first suggested by the 1986 vaporware named FUTURA. Though the QXL was introduced in North America two years ago, there are many minor points that have not been mentioned elsewhere, and were not covered in the recently released manual (some of this information has already been shared and may yet appear elsewhere). My own lack of information is partially the result of my year at an Indian Mission as well as my decision to no longer be a QUANTA subscriber *[I felt that QUANTA was too parochial in their outlook and non-UK members were apparently considered as an extraordinary postal nuisance]*

For those not familiar with the QXL, it is an 8/16 bit PC-expansion card which uses a 20 MHz 68EC040 microprocessor whose operating system [SMSQ] emulates the Sinclair's QL computer's QDOS operating system. The PC is the host which shares its I/O devices with the QXL card. The QL's SuperBASIC has been superseded by the QXL's SBASIC. Both of the SMSQ and SBASIC replacements are supposed to be more robust than their original forms. Apparently, some quirks have been reluctantly retained for backward compatibility with existing software.

THE HARD DRIVE

The immediate advantage of the QXL's hard drive is that each WIN0_ is set up within individual DOS partitions. This was *not* obvious to me at first and is not clarified in the newly released manual, but is left up to the user to find out.

Out of ignorance, I had reserved an entire hard disk partition for the QXL to use. So, when I went to FORMAT win1_24 and kept coming up "short" I was a bit perplexed. When I finally exited to DOS, I realized that my C_ drive was now "full" and that there was a file called "QXL.WIN" in the C_ drive DIRectory. HMMMmmm. Oh, I get it ... I FORMATted WIN2_ and that appeared on my D_ drive, WIN3_ ended upon my E_ drive; and, WIN4_ was placed on my F_ drive.

If your PC's hard disk is not partitioned, then you can only have one WIN0_ drive. So, if you are using MS-DOS 6.0+, and were too lazy to partition the hard disk, then you may want to go back and partition it into separate hard drives.

Just as there are reasons to have hard drive partitions on your hard disk, there is definitely a reason for having separate WIN0_drives. I found, quite by accident, that it is easier than one would like to corrupt a WIN0_ drive. I am pretty sure that my problems were the result of *misusing* FDFORMAT [Christopher H. Hochstaetter (Germany) via Tom Robbins]

My "user error" seems to create a problem for the rest of the system with both a 3.5" diskette and an SMSQ QXL.WIN file being corrupted. I think that the problem(s) occur when I inadvertently tried to read a 1.2 meg PC disk in the 5.25" drive which has been (for all intents and purposes) setup (?) to read a 720K drive. On one occasion, all the previously unused blocks on my E_ drive became "bad sectors" (i.e., unusable). Bummer. Clearly, this problem can be avoided by being less careless (i.e., better disk labeling). WOW ... Okay, the files on the 3.5" disk were dupes, but the contents on win2_ were my DBEASY files! DON'T PANIC ... plenty of room on the life boats ... When I finally decided to DIR win2_, it seemed that most of the DIRectory came up, until it came time for the screen to scroll the filenames. Abruptly, the QXL began to plod. Essentially, the QXL was *lost* while looking at a corrupted 24 megabyte file.

I exited to DOS and *looked* at the QXL.WIN file to see what might still be there: <file>, <file>, <file> ... followed by an SMSQ error access message. I reckoned that if the files were still *there* AND the DIRectory was still "there" that I might be able to COPY the files to another DEVice.

The key was to find which file(s) did NOT COPY as this would surely hang up the QXL. In this instance, I determined that the last filename of the DIRectory was not available to me. Knowing that, I WCOPied the contents of win2_ to ram1_ except for the last file. Obviously, if you have more than 4 megs of files, you should consider backing up to another DEVice. I then re-FORMATted win2_24, then WCOPied the contents of ram1_ back to win2_. I then ran ARCHIVE from win1_, typed RUN "R" (this is how I start DBEasy having renamed DBEASY_PRG to R_PRG), and it was surely my lucky day, because the program ran flawlessly, and all necessary files were accessed without any problems.

So, if you make the same mistake the odds are that you may have to reformat the particular WIN0_ drive. Worse yet, you may have to re-FORMAT the host drive! The advantage of having multiple WIN0_ hard drives as partition files on a PC host is that some diagnostic software for the QL may-or-may-not be available as of this writing.

SUPER MEDIA MANAGER may be useful, but, the one time I tried using it several years ago, it seemed to take quite a few hours to recover the files I wanted (including the learning curve). I am now very seriously considering getting a tape backup. Of course, if-and-when I get a tape backup for the PC host, I can selectively backup the QXL WIN files exclusive of the PC files and sub-DIRectories.

STAT WIN2_

In the "early" days of getting acquainted with the QXL, I found that I could NOT get a DIRectory of win2_ from within QUILL. This was a bit perplexing as I did not have this problem with QLAMBer. It turns out that each win0_ needs to be accessed "manually" at least once before a PSION program (and, possibly others) can access

them. This was remedied by adding the statements

STAT win2_ STAT win3_ STAT win4_ STAT win5_

to a line of my BOOT. STAT returns the DEVice name and its size

Another situation (this is covered in the manual, but is worth noting) was that I initially forgot to indicate PAR_USE "SER" (I think this has to indicate in upper case) and it appeared that SMSQ "crashed" when I went to PRINT a document. Fortunately, I had gotten into the habit of SAVing *before* PRINTing. Again, add the appropriate statement(s) to your BOOT program

THE SCREEN

The first thing that you cannot help but notice is that on a 13" VGA monitor the pseudo-QL's screen display measures only 9.5"diagonally. I recall once thinking that I wanted a ten-inch or smaller monitor for my QL for portability. I was younger then. I do know that some people had made mention of using a 17" or larger monitor, but I am not certain that this will result in a larger net display since it will probably map out the pseudo-QL to a similar dimension, and not proportion.

I did try a composite monitor (on an EGA card), a CGA monitor (with a CGA card), and a TTL monitor (just for the heck of it). None of these produced a usable display. Being the naive one, I should think that a device driver could be written which would map the display to better "fill" a VGA screen. I'm not holding my breath for this development, though it may be resolved with the yet to be released version. I guess I could sit a little closer to the monitor.

NOTE: *Though I just received a new disk (labeled "SMSQ V2.47") from DIGITAL, it had "corrupted" files on it. I'll have to wait to see what changes were implemented.*

THE KEYBOARD

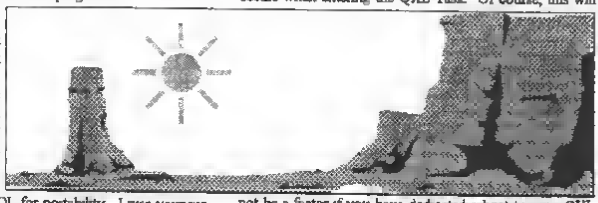
Since the keyboard is hosted by the PC, you would think that there would not be any problems. This is not quite the case. The earliest versions of SMSQ did not map for what I will refer to as the North American layout established by IBM's Selectric series of typewriters (I may be incorrectly presuming that Canada has the same keyboard layout). SMSQ version 2.31 incorporates a KBD_TABLE command which resolves this.

Regardless, a disconcerting QXL problem that I encountered was a *wildly erratic* keyboard. My host is a 20 MHz 386-DX clone with a Phoenix BIOS and a ZEOS RS keyboard.

Simply stated, when using QUILL the cursor would occasionally race all over the text. In the worst case scenario, while attempting to delete a single character, lines-and-lines of text would disappear as the cursor "munched" along merrily until I hit the (ESC)ape key!

Well, the solution to this problem was discovered while I was tinkering with my QLAMBer program. At some point while making code changes I must have realized that the NUMLOCK key was "on" and I turned it "off" with the net result being that the DELETEnious effect on the main part of the keyboard ceased. EUREKA.

BUT when running the QXL as a TASK under TaskMAX (DR DOS 6.0) a spurious character generation occurs when entering the QXL Task. Of course, this will not be a factor if you have dedicated a host to your QXL card.



Trial-and-error discovery revealed that the spurious character generation can be aborted by pressing a <CTRL> + <any_key(?)> combination. I use <CTRL><C>.

My "tests" showed that you CANNOT cut-and-paste from DOS to SMSQ.

As far as I know, the QXL can not be RUN as a TASK from within WINDOWS 3.1.

QXL/NT

Well, QXL/NT [as in "(e)x(cel)l(e)nt" or "new technology"] is my designation for the yet unnamed (as of January 1995) 50 MHz 68060 daughtercard. If a 20 MHz QXL with SMSQ is supposed to be faster than a 50 MIPS work station, then you might well guess that this newest incarnation might be fast enough for Abed to use. *(You're getting warm Al.)* My guess is that it will be formally introduced at this Spring's MIRACLE in Oak Ridge (!?!)

Based on the recent price reduction of the QXL, I would guess that the QXL/NT's initial price might be similar to the "old" QXL prices. WOW.

THE BOTTOM LINE

Based on hardware developments over the past three years, the QL apparently has "legs" and QDOS and SMSQ will probably remain as viable alternative to mainstream Operating Systems.

Consequently, your wallet should be the only restraint from your upgrading to a QXL/(NT), or (SUPER) GOLD CARD.

I can't wait to see what the QXL/NT can do!

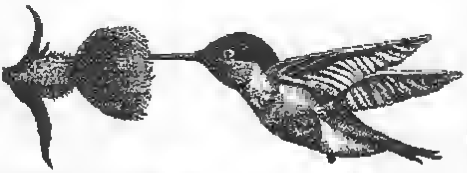
HAPPY TRAILS,
AND COMPUTING, TO YOU.

Z88 — Power To You

by Hugh Howie

I have been reading what various folks have to say about the Z88 Power Supply, and the types of batteries to use, so I thought I would add my little contribution to the discussion.

When I first got my Z88, I had to use batteries, so, as I had some Ni-Cad lying around I used them, and I found that they worked fine. I had no real Problems. Perhaps I did not get the full twenty hours out of a set of batteries, but what I did get was quite adequate for me. Problem was that two sets were required, so I got a second set that was of a different manufacture as the first so that when a battery change was being made, there was no chance of a mix-up. I was happy with what I now had.



I eventually allowed myself to be convinced that the alkaline battery was the way to go. So I bought a charger and two sets of batteries, and right away I saw a problem - how to keep the two sets apart, so I solved that one by getting some very thin bright red plastic paper and pasted a strip about a half inch wide, around each battery of one set with this. Works great!

Yes! I do believe the Alkies last longer, as to brighter representation, I don't think so.

How do I keep my spare set in the traveling case I use for the Z88? Well, I had been putting some of that round plastic foam insulation on my hot water pipes, so I took a short piece about 8½ inches long, glued a plug in one end, inserted the batteries, and found a plastic plug for the other end. Now I have no more loose batteries rattling around.

This being Income Tax time, I, like everyone else, had to get out my old printing calculator, only to find that it was "Out of order" close inspection showed that one of the rubber bands that carry the numerals had broken. I guess it had deteriorated over the years, and just became brittle.

What to do now was the question, so I hied over to my local Business Depot, and found I could get a 6 x 8 inch printing calculator for $39.95, which was a lot less than what I paid for the broken one, and less than a repair job would probably be.

The digital display was about ¼ of an inch high, gosh, even I can read that size! This little beasty also worked off four AA batteries, so I brought one home with me, inserted my old Ni-Cad batteries, and off to the races. Boy! could that little thing really trot! Did as much as my old expensive one ever did, and equally fast too.

The price also included an adapter, so I had a printing calculator using the standard 2¼ inch paper, that works off both battery and mains — what more can a man ask for?

I looked at the adapter. Thought about the four AA batteries — Six volts. What was the adapter end like? Looked awful like the end that would fit into the Z88. Plugged the adapter into the wall, out with the voltmeter, checked voltage. Yep, OK, checked if center was positive, Yep. Hey man! this could work the Z88! Plugged it into the Z88 orifice, OK. Removed the batteries, OK. Okay! I now had a mains powered and battery powered Z88, and also a mains powered and battery powered Printing calculator. All portable! The one adapter can be used for both units. I can't complain about that — could, or would you?

Now in case you are interested, the calculator is a Canon P20-DH. The adapter used is a Canon AD-11 6 volts, 300 ma.

I now have a portable computer, and a portable printing calculator with large display.

With that setup I would not call the King my cousin. Would you?

Z88 - My Memory Surprise

by **Hugh Howie**

An "IN USE" Problem

Recently when using my Z88, I was bugged by not being able to save to a file that was already in existence. I also could not erase that file. I could load it, edit it, save it to another title, but not the original title. I was continually being told IN USE. I did note that the original title had 2478 bytes, but the second title had only 2477 bytes. It was much later I took any notice of that.

After a few hours of this and that, and trying many things, I decided to call Paul Holmgren and get his view on the problem. He made a few suggestions, none of which were of any value, then he asked "Have you tried a SOFT RESET?" I had not - did so, and problem solved. Now both titles had the same number of bytes. I can only presume that something had added an extra byte and caused the IN USE function to be activated.

Since then I have had the same thing occur again, and a soft reset cures the problem - but I still would like to know what *CAUSES* the problem.

Another thing Paul and I touched on was memory. After we got off the phone I took another look at the memory I had available, which was in the region of 238K. Now I do know that when I got the Z88 I had a 128K RAM card in #1 slot. On thinking, I came to the conclusion that the *originally fitted internal* RAM and the existing external RAM could not possibly add up to 238K with a number of records on file. How to find out was my problem.

I had noticed that all files were SAVEd and LOADed from RAM 0, so I wondered what would happen if I SAVEd to RAM I, using different titles of course to make sure all was in order. I discovered I had both sets of titles in different RAM numbers.

Next stage was to remove the external RAM from its #1 slot, and see what was left. I still had well over 110K left! This now proved that there had to be not the original small RAM which I understood to be about 12K, but that I had an INTERNAL RAM of about 128K? So I, in this small machine must have 256K. Is that not WOW - in consideration of what I paid for it initially?

Plugged the external RAM back in, and I was back up to the 238K mark once again. I don't know what I have really, and I would have to erase all my files just to find out - and who cares anyway All I know is I have oodles and oodles of memory I can save to RAM 0 or RAM I. just like a double disk drive! And none of those rattles and groans and grunts and BAD MEDIUM messages of the MDV's

I have been asked what I use my Z88 for. Well, I use it in the car and at home. I can have a number of files such as bank account, car expenses, tax account, diary of noteworthy dates, a notebook (have you seen my writing? I can hardly read it myself on occasion) and when I get home, I can transfer all that stuff to my QL disk system for safe storage.

It frees up my QL's for other works. And I really do believe that the spreadsheet has many advantages over the QL system. Yes, a very handy little tool indeed.

I understand that Paul Holmgren and Frank Davis are selling them for $230, including the 128K RAM, which is very favourable compared to the UK where the price is £99 plus shipping of £20 to the US and Canada.

(See Mechanical Affinity ad.)

Response to Part One of this series has been quite gratifying so far. However, from what I've heard, it seems that a little "fine tuning" of the format is in order. Essentially, we'll do fewer things in each installment, stretch the series out longer, and give a little more attention to detail. This will give those new to the subject a little more help and time to catch-up. It also means that we won't cover as many things this time as promised, but it will all get done, eventually.

I hope readers who own or have access to a TS-2040 printer have tried out the demonstrator program. If not, it would be worthwhile to do so before reading further. Now, back to the questions.

6 How does the demonstrator work?

Pretty well! Seriously, let's first look at what the demonstrator sets up in memory, and then we will see how it all works together. Understanding this description will require a bit of knowledge of machine code, but only a bit. The demonstrator has been written to be understood by as wide an audience as possible. (That audience will also need a little persistence, though.)

Line 30 CLEARs the necessary space for the interrupt software. Line 40 fills memory locations FE00H (65024) to FF00H (65280) with FDH (253). Line 50 places a JP FF08H (65288) instruction at location FDFDH (65021). Lines 60 and 70 load the following machine code, starting at location FF01H (65281):

```
10 REM IM2 Demonstration Progr
am
20 REM Causes a Copy-Screen wh
enBREAK and SYMBOL-SHIFT are pr
ssed together.
30 CLEAR 65020
40 FOR j=65024 TO 65280: POKE
j,253: NEXT j
50 POKE 65021,195: POKE 65022,
8: POKE 65023,255
60 FOR j=65281 TO 65314: READ
k: POKE j,k: NEXT j
70 DATA 62,254,237,71,237,94,2
01,245,197,213,229,62,127,219,25
4,248,224,254,252,32,6,243,0,192
,205,5,10,225,209,193,241,195,56
,0
80 RANDOMIZE USR 65281
```

I've divided the code into five blocks, whose meaning will be explained shortly.

Line 80 executes machine code at location 65281, which, not so coincidentally, is equal to location FF01H in the machine code listing. Only block #1 is executed, since it ends with a RET instruction. Block #1 loads FEH (254) into the I-register and sets the machine into interrupt mode 2, whose operation was explained last time.

```
ADDR HEXCODE  LABEL MNEMONIC
FF01 3EFE     LD A,FE
FF03 ED47     LD I,A
FF05 ED5E     IM 2
FF07 C9       RET
FF08 F5       PUSH AF
FF09 C5       PUSH BC
FF0A D5       PUSH DE
FF0B E5       PUSH HL
FF0C 3E7F     LD A,7F
FF0E DBFE     IN A,(FE)
FF10 FAFBFF   JP M,FFFB
FF13 1FFFC    CP FC
FF15 2005     JR NZ,FF1C
FF17 3E3      CP 3
FF19 06C0     LD B,C0
FF1B CD00BB   CALL BB00
FF1E E1       POP HL
FF1F D1       POP DE
FF20 C1       POP BC
FF21 F1       POP AF
FF22 C33800   JP 0038
```

From here on, the TS-2068 is doing something new that it does not ordinarily do. Every time an interrupt occurs, the machine has to find out where it is to execute the interrupt code. It gets the upper byte of an address from the I-register and the lower byte from the data bus. This combination is the ADDRESS OF THE ADDRESS of the interrupt handler. It will become clearer (hopefully) as we "walk through" what happens.

When the TS-2068 gets an interrupt it looks to the I-register and the data bus to generate the address FExx, where xx is a number that is not known because the TS-2068 mysteriously puts different values on the data bus at different times. The TS-2068 will then look to memory location FExx for the address of the interrupt handler, and then run the code wherever that happens to be.

However, the BASIC program filled all memory locations from FE00H (65024) to FF00H (65280) with the number FDH (253), so no matter what value FExx happens to be, the TS-2068 will find FDFDH (65021) when it looks there! This is where it will start to execute the interrupt handler.

Unfortunately, FDFDH (65021) is just 3 bytes less then FE00H (65024), where the "kluge block" of FD's is located. There's not room for much code, but there's just enough space for the JP FF08H (65288) instruction that the BASIC program put there. This means that the interrupt handler will continue at location FF08H or block #2 in the machine code listing. (It gets a lot simpler from here on, honest.)

If the explanation seems murky so far, it's O.K. to forget it for awhile. Just take my word for it that the aforementioned code makes it appear that an interrupt will cause code to be executed at location FF08H (65288). This is where our true interrupt handler is to be found.

The handler begins with block #2 which saves all of the registers. We do this so that we can leave them as we found them when we're done. This will ensure that we don't disrupt the program that was running when the interrupt occurred.

Block #3 reads a small portion of the keyboard. We won't cover keyboard scanning here, but block #3 causes block #4 to be skipped if the BREAK and SYMBOL SHIFT keys are not being pressed simultaneously.

Block #4 causes the screen to be copied. Before CALLing the screen copy routine in ROM, we load B with the number of pixel lines to be copied. Changing this would allow us to COPY only part of the screen.

Block #5 prepares the computer to leave our interrupt handler. All registers are restored to their original values. Note that the first item that POPs off the stack is the last item that was PUSHed on. This means the registers must be restored in reverse order.

Ordinarily an interrupt handler ends with RETI (similar to RET) instruction. In this case, we'll end it with a JP 38H (56), which jumps to the normal interrupt handler. This allows the normal interrupt functions of keyboard scanning and updating the system variable FRAMES to be performed.

7 YOU MENTIONED COPYING ONLY PART OF THE SCREEN, HOW IS THIS DONE?

By LOADing a different number into the B register before CALLing the COPY routine, You can change the number of lines printed in the following way. Suppose that LINES = the number of lines of characters (from the top of the screen) that you want to COPY. Just POKE 65304, (8 X LINES). The handler is now setup to COPY only part of the screen.

8 WHAT OTHER THINGS CAN AN INTERRUPT HANDLER DO?

By reading the system variable FRAMES, which is incremented every 1/60th of a second a nice real time clock can be made, that flashes the time up on some unused part of the screen, even when you're running other programs. FRAMES isn't updated when the interrupts are disabled so the clock "stops" whenever you use cassette I/O, the TS-2040 printer, or the BEEP commands and resumes when you are done. Still, it's a free "software only Clock".

If the interrupt handler were linked to a hardware real time clock, the clock wouldn't stop at all!

Among other uses is an item called a print spooler. Printers are very slow compared to the computers running them, and the computers spend most of their time waiting while the printer is running. It's possible to send LPRINT commands to a buffer area in memory, and have the interrupt handler "pick up" this data and print it one character per interrupt.

This would allow the printer to run at up to 60 characters per second while you're doing other things with your computer. In other words, you could be RUNning or ENTERing a program at the same time as the computer is printing something else. Those who've used such a feature on an IBM PC or other computers will agree that it is a great time saver.

Another use is a program that reads and "stacks up" keyboard entries before the computer requires them. When an INPUT is needed, it gets it from this stacked up data. This is called a keyboard buffer, and it's also very convenient.

Since the interrupt is synchronized to the video displays it's possible to change the BORDER color some fixed time after the interrupt and obtain a "full screen horizon" that extends into the border area. The Spectrum game *Aquaplane* does this, but the required timing may be different to make the effect work on the TS-2068's a 60 Hertz interrupt. (The Spectrum uses a 50 Hertz interrupt.) I've not seen the game working on a TS-2068, but the effect is still available to us.

These are items that come immediately to mind. Other less obvious uses are out there. One that I'm considering involved my software that makes BASIC work in the 64 column mode. Certain keyboard inputs cause the computer to change a system address table in an undesirable manner. I expect to use the interrupt to "change the table back" before any harm is done.

There are many other uses.

A PROLOGUE

Doug Dewey, member extraordinaire, of the Tri-angle Sinclair Users Group, tells me that merely adding pull-up resistors to a Spectrum emulator as suggested last time, doesn't clear up all of the problems related to certain "un-RUNnable" Spectrum programs. He's sending me copies of some programs, and I'll be checking them out especially in understanding the way the Spectrum handles the data bus during interrupts and whether my "fix" works as expected on all machines.

Next time (or in later installments) we should be looking at the problems of relocating the demonstrator code, of the (solvable) problem of doing something like the demonstrator on a TS-1000, and constructing hardware to make use of the TS-2068 Non-Maskable Interrupt. Those looking for a challenge should try to relocate the demonstrator to reside in the 16-32K memory region. When a certain part of the interrupt software resides in the same 16K region as the display file, something interesting happens. It still works, but...

TS BULLETIN & BASIC N-L

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Times are changing. Woodstock 1994 has just run its muddy course, and the ones of liberation from 'the system' that brought the 'computers to the people' movement onto the fringes of the peace movement and an underground press freed due to technology, all that 60's stuff, flood back. It seems so recent. How things have changed! The computers that 'the people' did get, have become part of an urban piecework/24-hour on-call-employee, economic system which is not particularly liberating at all. The cheapness of publishing has reached the point, however, that personal publishing is within the reach of just about anyone with a minimum of know-how. But it has led to a new form of co-op publishing, which is something similar to network publishing/BBS text files, in that the writers for a new generation of small, personal, and specialized publications, commonly called 'Zines' (short for magazines or fan-magazines'), may have never met face-to-face, and send their material in mainly by modem, (and not to BBS systems or commercial networks, mostly but person-to-person), starting the session with a voice telephone conversation. This means that contrary to what George of Toronto Sinclair User Club said recently, it is quite normal today to run a publication with the officers/writers/editors spread out across the country. It is not even necessary to have a modem, (I don't), since the bandwidth of a 50¢ stamp is considerable when used to carry a diskette across country. Anyway, times are changing, and it would be a shame to see the user Group movement fold, just on the basis of things like this.

All this brings back not-too-pleasant memories of the Ottawa TS group folding. While the club newsletter folded, this one continued on a reduced scale but there are no plans ever to simply halt. The last year saw one supplementary newsletter like this, and perhaps the photo-reduced, small format newsletter has more issues left to go. So it continues indefinitely if sporadically, in other words. The only change is the decision to take material out of the public domain since with few newsletters left to republish it, that makes little sense. The original reason for putting material in the public domain in the cost, (aside from a challenge from the Texas TS group), was to facilitate copying without red tape of asking for permission or worrying about legal technicalities. Now all such permission has been withdrawn, since for material other than that submitted by myself to other newsletters (and there is still tons of stuff in drawers here, unpublished), it looks like there will be few hobby publications to publish them. So I might as well keep the copyright since some of the material may get sliced into my own writing on various subjects (techno-trends and techno-history is the current writing interest in a relate field).

But there are other, rather important reason to continue. There are things to do. What can this newsletter offer? One thing is celebration of the liberation from a stuffy educational system that has lost its touch, at least for education of the ordinary student in subjects of close job and modern mathematical relevancy, this liberation brought by the near universal availability of home computers. We can add practical help with reader self education especially in programming. And the final one: a boost for BASIC, the programming language despised by this educational establishment, but still, just about the only programming language a beginner can learn, almost alone. Since a beginner cannot learn it completely alone, there lies a task for such a newsletter as this, emulators, simulators, word processors and databases all look remarkably simple from within, if the simplest possible BASIC programs are used to explain them. Computer software is to mathematical education today, what reading and writing was by way of a con commitment, in ancient times. So here is to a revised newsletter, featuring, BASIC and TS home computers.

Great Blue blazers and Other Incendiary Topics

The question of why anyone would turn their cost and run into the arms of the blue-blazing IBM clone world, has again reared its ugly flaming head. Why not? They certainly are cheap, 286's selling for a couple of hundred used here (even though those like the writer see no need to trade in the 8088, with less than a full unit of Norton SI seed). The clone world has finally caught up with the pocket-book size of even ZX-TS users. Perhaps in the future, outside of museums, the only TS computing, will be inside clones with software emulators. But that does not mean that the TS BASIC'S need be abandoned for others. And since CP/M emulators for clones are easy to find and cheap (How is free? Cheap enough?), the CP/M side of the Z-80 (and former QL CP/M emulator users) Sinclair computers can continue too. (Maybe CP/M command line use will live almost as long as MS DOS command line, now that MS Windows and its quasi-clones, are replacing MS DOS command line interface in clones. And it all started in DEC computers and Victorian era telegraph systems, according to my historical techno-archaeology.) So, why not both?

The second question is, why not turn TS groups into programming workshops, specializing in old computer hobbyist languages like PASCAL and even BASIC interpreter programming. This thought was greeted with terrific ennui every time I would propose it at meetings of our now-defunct Ottawa-Hull TS User Group in various ways and versions, over the last years. At least it would have helped the kids, some new youngsters coming to the last meetings of our club, looking for such talk and tutoring in techno-literacy. Whether BASIC deserved it or not,

academics shunned it, making our BASIC an orphan language just as the home-type computers were orphaned by their manufacturing supporters in the 1980's. A good academic question is whether it was BASIC or the computers being orphaned that ended most user groups.

"What To Do?" Is Today's Question

The question now, is what to do with our hobby and the organizations that have been painstakingly built up. My suggestion is to keep them going in some fashion for their educational value. Kids today do not have much chance of really learning the interesting and essential mechanics, at school. It is a mathematical job world out there today, and the school system is, pardon my French, royally confounded when it comes to teaching the same, and the fundamentals of structure: why it all works, when it comes to computers. To make a bold prediction, we will see that in the next 50 years, computers as boxes processing separable software, will die out, (except for niche markets). Software will be embedded in ever-cheapened boxes and world economic dominance will go to whatever major power (economically) whose kids master this best. And it is the computer user groups with their expertise in combining hardware knowledge as it relates to low level software and programming affecting it, that know this and can teach it. End of sermon. Let's just not waste this opportunity to give our kids a boost up. There is *no* one else, just believe me.

The Problem With BASIC — (Part I)

Within a newsletter which has just (see previous page) been thoroughly and wholeheartedly committed to continuing support of BASIC as a computer language for those rare individuals who cannot resist taking things apart, in this case types of computer software, to see exactly what makes them tick, starting by offering- a gratuitous criticism of BASIC may seem just slightly peculiar. However, let us be honest about our favorite computer language it does have its theoretical flaws. The fact that no other full language was available to most home computer owners in the 1980's, (and buyers consistently rejected home computers with FORTH installed in ROM rather than BASIC), may seem to point to the fact that we BASIC programmers are simply making a virtue out of what started as a necessity and became a habit. But be that as it may, true or not, BASIC is both defensible and meriting some criticism. (About FORTH, one might say that it too was not a complete language in that it never, at least in its versions of the 1980's got a built-in floating point number data type or stack, and may have failed due to lack of such features which would have made it easier to use, like screen handling and graphics modification commands. Imagine bit twiddling with fast FORTH.)

One of the criticisms of BASIC revolves around some of the structure that it lacks, even though it abounds in features in many dialects. But if you look at its competitors, like the structured Pascal and MODULA, you will see they lacked a lot of features that make BASIC easy to use, and cannot be considered, especially MODULA which never became popular (as it deserved to be), full featured. In addition, Pascal, it seems did not start life without the GOTO, philosophical phobia trigger of so many BASIC critics. ALGOL, Pascal's predecessor, much praised for being rational at the time, by the usual purists, used GOTO, long before it was discovered that ALGOL programs without GOTO were always an alternative for the programmer, something not realized previous to the letter to the editor of ACM/Communications, by Prof. Dijkstra (1968) and his earlier remarks (1965) and work of van Wijngaarden, in 1968 (Ref. Yourdon).

A second criticism laid on BASIC, is that its many dialects make it a nonstandard and unstandardizable language. Of course this was a result of BASIC prospering and spreading, the languages which died or backed into shrinking niche markets early on, never getting to that point. (What if Pascal had prospered to the point where TURBO Pascal had been just one dialect that had moved far away from standard Pascal. Actually, on second thought it is, with a claim for at least three incompatible dialects, all of them various vintages of TURBO Pascal!) As our local group member and Pascal booster , David Solly remarked once, those who criticize BASIC for its dialects, likely do not realize that it is just showing the behavior characteristic of languages, and more notable among natural languages like English, French and Dutch, ones Dave was quite familiar with, being a language buff that is, developing differences that we call dialects, etc. and just plain evolving with time.

Looking at the alternative those critics of BASIC offer today, C language, one sees that it lacks the logic admired in Pascal and MODULA, has a host of dialects now, that hated feature of BASIC by some of its critics, and is in reality a souped up, stripped down hacker language, flagrantly exhibiting a third point usually used as a criticism of BASIC, the way BASIC was used and abused by hackers and small time programmers in the microcomputer era.

But BASIC does have its faults. Let us be quick to admit them. But these are not unconnected with its virtues. Its virtue was that when it was devised, in 1965, long before microcomputers it was designed to run on terminals, and its line-at-a-time interpretation which slows it and reduces its structure to a rather fragmented form was simply necessary, given roll paper scrolling and primitive editing, lack of computer time to share, etc. If things had gone differently, this also could have been a big advantage in the world of microcomputers, in adapting BASIC interpreters to simple substitutes for true, low-level multi-tasking, but that never caught on in microcomputers, CP/M and MS DOS modeling themselves on OS/8 and OS/10 of DEC rather than UNIX.

The second weakness of BASIC is its reliance on variable length data structures of strings and later disk files, like DEC operating systems and terminals that were originally used by telegraph companies to send messages of various lengths. Anyway, that is too important a point not to discuss in detail which we can do another time. Stay tuned for article II.

Daisy Be Good - II

by David Lassov

We continue discussion of Bill Jones' suite of Word Processors for the TS-2068. So, get out your disk, Daisy B6, Disk No 1.

Upon AUTOSTART, copyrighted banner comes up with a little tune and a request, that you "Press A Key-."

For the second prompt, we press 2, since we normally wish to use our Brother M-1109 a dot matrix printer. Press 3, in case you have not yet matched the program to your printer via a customized routine "stymn.B6" and menu "ps C1". Press 1 will allow you to follow along, using the TS 2040 as a printer for your word processing.

The third prompt requests, that you describe your printer interface. We select 1 for our AERCO Centronics Printer Interface. Select 2 for Tasman CPI or 3 for A&J. Right now, we need software-generated line feeds. So, we answer Y to this fourth question.

Right Margin Justify is about the best thing to appear in home computing software, that we have ever seen. So, Y is the answer to the prompt #5. As you see, we like to indent the first line of our paragraphs by five spaces. So, we answer the last question in the affirmative.

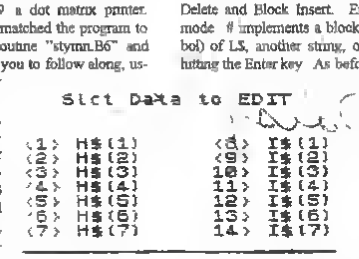
This brings on the Function Menu. Notice Turbo = 1. We have just LOADED that incarnation of Daisy, which handles Input/Edit. The Main Menu for this facility is the Quickie Menu. So, we press 1, press 1 again (for Daisy dB Manager,) and get it straight-away.

In the *Input/Edit* mode, the principal application routines are "inpt.B6", "edt.B6", and "cat.C1". Other application routines are Deleted and these last three are Merged in, whenever Turbo is changed to 1 or to 3, or whenever *Input-Edit* is selected at the Function Menu (as option #1.) Or, of course, they can already be on board, as in this case of the AUTOSTART selection on the Daisy disk. And, by the way, the Quickie Menu is *the* "Daisy dB Manager."

Should we "Press Select" item "1 Typing," we are presented a blank screen with a brief display on line 22 of "Arrows = Edit Cap+SymShf = Menu". This is Bill's online indication of a way back out of the typing screen and in to the Quickie Menu, similar to the "Function Keys" of Mscript. In the Input/Edit mode of Daisy, we have two phases, the Input phase and the Edit phase.

With the departure of the display on line 22, we enter the input phase, which accepts keyboard input at typewriter speed (at least 30 wpm) and builds a "typing buffer", called u$. Any cursor movement with the *arrows* enters the edit phase. In order to re-enter the input phase, simply hit the Enter key. Now hit "Cap+SymShf", in order to get the Q menu back onto the screen.

Should we "Press Select" item "2 Re-ed", we are presented with a menu of 21 choices. Choice #21, Abort, gets the Quickie Menu back with no potential damage done. The other 20 choices place any of 20 data strings on screen for editing in edit mode. Whenever in the edit mode, a press of the pound key "#" introduces us to Block Delete and Block Insert. Enter resumes a slower input mode. # implements a block insert (at the underline symbol) of L$, another string, or just arbitrary typing, upon hitting the Enter key. As before, "Cap+SymShf" allows us to *escape* to the Quickie Menu.



"3 Store" allows us to store (in RAM) each of h$(1), h$(2), , h$(7) and i$(1), i$(2), , i$(7), in that order, after we enter a paragraph length, one for the h's, another one for the i's.

"4 Help" takes us back to the Function Menu.

"5 Delete Buffer" allows the user to reinitialize the typing buffer (u$), without storing it into one of the h's or i's.

You are left with an empty screen in input mode, as in selection #1.

"6 View/Edit Array Cells" permits the user to view and edit any of the h's or i's. *Very handy!!!!* But, the edit mode, here, requires patience and is nevertheless very handy.

"7 Word Replace, Global" searches each of the h's, i's, and selected other strings for a desired word, and replaces it with an even more desirable word.

"8" allows typed input to the L$ string, the same one that can be entered at selection #2, above at "Block Insert".

"9" cycles the input cursor between "L" and "C".

" " reinitializes all the h's, all the i's, all the h's and i's, *or* none at all. Any reset is to a single blank character.

"," allows us to create colorful screen strings, such as menus or opening broadsides, *fascinating*.

"<" permits us to LOAD (from disk) character arrays into the h's, the i's, or all at once.

"=" permits us to also SAVE (to disk) character strings of ASCII characters: the h's, the i's, the h's and i's, or the *entire* variable file.

"Buffer = NNN" indicates the number of characters (NNN) in the current typing buffer (u$).

"Cell Limit = NNN" indicates the number of characters (NNN) in current h or i, being filled. Note, that NNN also indicates the maximum number of characters of the typing buffer (u$), that will be *stored*, by invoking option #3. So, frequent reference to these numbers will allow trouble-free entry of paragraphs into your growing letter or document.

"H-i" indicates which data buffer h$(i) is being filled, by *storing* the typing buffer (u$) at item #3

"Lj" does the same, when working on l$(j)

"FREE=NNNNN" indicates the amount (NNNNN) of free RAM, remaining for the 20x8 to conduct string editing and other operations. The same information appears on the Function Menu, as well as other menus throughout Daisy, since memory utilization is so critical in the 2068

"L$=k" indicates the current number (k) of characters in the L$ string, much used for Block Insert, as above, and for Block Delete, as the deleted material is automatically stored in L$

And, lastly, "ed" is the BASIC address (ed=2926), to which transfer should be made, in order to recover the Quickie Menu display from most places of the program. For example, break into the program and type "GOTO ed" or "GOTO 2926" Similarly, "GOTO fm" or "GOTO 2070" will recover the Function Menu display

Next time, we will continue , by discussing the next entry on the Function Menu, #2, Print Header

Daisy Update

We continue to describe the operations of our new and improved Daisy word processor, using our TS2068, LKDOS (I.3), and 9-pin printer Brother M-1109. This time, we talk about the Quickie Menu.

Just as the Daisy dB Manager comes up in Bill Jones' original formulation, *only* when Turbo = 1 or Turbo = 3 holds, so the Quickie Menu appears *only* in In+Ed.B6 and ManAd.B6, respectively.

Please read the other article on Daisy this issue for standard details on the Quickie Menu. Here, we will indicate how we use this menu to accomplish the most amazing amount of satisfying work production.

Typically, we start entering a letter or document, by LOADing in+Ed.B6 from disk. The Function Menu comes right up with no prompting, as there is no printer to initialize in this current effort to enter a letter, or other document, into a disk file as a character array

Next, we *press* 1, in order to commence Input-Edit. Now faced with the Quickie Menu, we enter Input mode, by *pressing* 1

This results in a brief reminder on line 22, that use of the cursor arrows leaves Input mode and enters Edit mode, and that Pressing Cap-Shf and Sym-Shf at the same time will return us to the Quickie Menu.

Entering Input mode, we type away (at "TURBO speed", according to Bill) Our typing is captured in string u$

After typing in our first paragraph, we *press* Cap-Shf and Sym-Shf together At the Q Menu, we observe Buffer = MMM and *press* 3, in order to Store our typing buffer (u$) in RAM, before something happens to it. Of course, we have to input a length for this, our first paragraph, which will go into H$(1) This input 1 can be any number with MMM <= 1, and 1 will be used to DIMension all of h$(1), h$(2), .. , h$(7), in order to store our first seven paragraphs

What is the best value for 1, the "magic number"? Well, anything at least MMM will do and Bill's suggested value of 700 stores a paragraph of about one screenful But, 704 not only stores a screenful and stores the entire h$ character array in *only* one track of the disk at item "-", but also permits a *very* nice display of the h$ array as a "disk file" in program Po+Mm B6, which is usually used for printing our letter/document, but lacks the sophisticated display facilities of In+Ed.B6

In order to check our progress, we get the Q Menu on-screen and *press* 6 Here we can cycle through each of our paragraphs, as Stored in h$(1), h$(2), .. , h$(7), i$(1), i$(2), .. , i$(7), edit them, and return to the menu.

The edit mode is performed *slowly* and in BASIC. The input mode is performed *quickly* and in cat.C1, which is Don Lamen's MC program. Bob Swoger calls it a "Journaling Program". The *slow* edit mode is the *only* drawback, we have found with Daisy; so, that's not so shabby !!!!

We mention this, *only* because Larry Kenny's Mini Word Processor is all in BASIC, and it is *not only* as fast on input, *but also* as fast on edit, with no letdown in speed between input and edit. This code comes from Larry a "Sequential/Random Access Files" and must be similar to what he had in mind for his "LarKen Desk Top Publisher", which will probably never appear !!!

Bill's editor is elaborate and implements all of Header Entry, Block Insert, String Insert, Block Delete, Back Shift, Right Shift, Line Feed, Cursor Up, character Delete, and Resume. Larry's code implements all of text Enter, text Insert, text Delete, text Erase, cursor Move (all), Escape, and Newline. MWP works fine for Max-Com!!

```
q$ Finished
r$ Finished
y$ Finished
h$(1) Finished
h$(2) Finished
h$(3) Finished
h$(4) Finished
h$(5) Finished
h$(6) Finished
h$(7) Finished
i$(1) Finished
i$(2) Finished
i$(3) Finished
i$(4) Finished
i$(5) Finished
i$(6) Finished
i$(7) Finished
```

As far as we can see, we are considering a singularity of Bill's code, which can *only* be removed, by replacing mpt.B6, edt.B6, and cat.C1. But, can the many features of edt.B6 be replaced? And, this entire input/edit facility is a foundation of Bill's Dbms code, also

Well, it's best not to make too many mistakes in the first place !!

Oh, yes, option #7 (Word Replace, Global) is also in BASIC and *slow* But, in this case, we are not talking about searching a *giant* data base and progress *is* shown on-screen. So, it is not at all troublesome, even though slower than both Larry's MC search in MWP and Tom Wood's MC search in PROFILE

In our copy of Daisy, the original code for #9, to Cycle Caps, had to be repaired for our new and improved version.

And, *lastly*, item "," for "Macro Mgt" is *fascinating*, incorporating the 2068's color capabilities into the construction of beautiful banners This is one of the reasons for our loss of interest in the TS1000 as our primary personal computer !!